

Amendments to the Claims:

Claims 1-36 are pending in this application. Claims 1, 18 and 31 are independent.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (CURRENTLY AMENDED): An image sensing element ~~for sensing to be used for an~~
image sensing apparatus having an image sensing lens and a stop, and arranged to sense an image
formed by ~~an~~ the image sensing lens, the image sensing lens comprising:

~~a pixel which includes a first light receiving region that includes a region where a principal ray~~
~~having passed through the image sensing lens is incident, and a second light receiving region that~~
~~does not include the region where the principal ray having passed through the image sensing lens~~
~~is incident when a stop of the image sensing lens is in a stopped-down aperture state thereby~~
~~reducing the degree of decrease in sensor output compared with the sensor output in a full~~
~~aperture state of the image sensing lens~~

a plurality of microlenses; and

a plurality of light-receiving portions arranged so as to correspond to the
respective microlenses,

wherein each light-receiving portions includes first, second and third light-
receiving regions each outputting a signal, the first and second light-receiving regions having
substantially symmetrical shape and being arranged to sandwich the third light-receiving region,
center portions of the first and second light-receiving regions being wider than peripheral
portions of the first and second light-receiving regions.

2 (CANCELLED):

3 (CURRENTLY AMENDED): The element according to claim ~~2~~ 1, wherein the ~~two~~ divided first and second light-receiving regions are used to at least detect a focus state of the image sensing lens.

4 (CURRENTLY AMENDED): The element according to claim ~~2~~ 1, wherein the ~~two~~ divided first and second light-receiving regions are used to detect a focus state of the image sensing lens and photograph an object.

5 (CURRENTLY AMENDED): The element according to claim ~~2~~ 1, wherein one of the ~~two~~ divided first and second light-receiving regions receives a beam from one of two predetermined regions on a pupil of the image sensing lens and the other of the ~~two-divided~~ first and second light-receiving regions receives a beam from the other of the two predetermined regions on the pupil of the image sensing lens, the two predetermined regions being regions that sandwich an optical axis.

6 (CURRENTLY AMENDED): The element according to claim ~~2~~ 1, wherein the ~~first~~ third light-receiving region is used to determine a time during which charges are accumulated in the first and second light-receiving ~~region~~ regions.

7 (CURRENTLY AMENDED): The element according to claim 2 1, further comprising a function of individually outputting charges accumulated in the first, second and third light-receiving ~~region and charges accumulated in the two divided light-receiving~~ regions, and a function of outputting a sum of charges accumulated in the first, second and third light-receiving ~~region and charges accumulated in the two divided light-receiving~~ regions.

8 (CANCELLED):

9 (CURRENTLY AMENDED): The element according to claim 2 1, wherein the ~~first~~ third light-receiving region is ~~relatively narrow~~ narrower than a width of each of the first and second light-receiving regions at a center and ~~relatively wide~~ wider than the width of each of the first and second light-receiving regions at two ends.

10 (CANCELLED):

11 (CURRENTLY AMENDED): The element according to claim 2 1, wherein a region formed from the first, ~~and second~~ and third light-receiving regions has a substantially regular polygonal shape.

12 (CURRENTLY AMENDED): The element according to claim 2 1, wherein a region formed from the first, second and third light-receiving region regions has a shape substantially obtained by cutting off each corner of a square.

13 (CURRENTLY AMENDED): The element according to claim 1, ~~further comprising a wherein the microlens which causes two divided~~ is arranged to cause the first and second light-receiving regions to respectively receive beams from two predetermined regions on a pupil of the image sensing lens, the two predetermined regions being regions that sandwich an optical axis.

14-17 (CANCELLED):

18 (CURRENTLY AMENDED): An image sensing apparatus comprising:

an image sensing element ~~having a pixel which includes a first light-receiving region that includes a region where a principal ray having passed through an image sensing lens is incident, and a second light-receiving region that does not include the region where the principal ray having passed through the image sensing lens is incident when a stop of the image sensing lens is in a stopped-down aperture state thereby reducing the degree of decrease in sensor output compared with the sensor output in a full aperture state of the image sensing lens~~ arranged to sense an image formed by an image sensing lens; and

a control unit ~~for detecting~~ arranged to detect a focus state of the image sensing lens ~~by using the second light-receiving region, and performing~~ perform focus adjustment,

wherein said image sensing element comprises:

a plurality of microlenses, and

a plurality of light-receiving portions arranged so as to correspond to the respective microlenses, each light-receiving portion including first, second and third light-receiving regions each outputting a signal, the first and second light-receiving regions having substantially symmetrical shape and being arranged to sandwich the third light-receiving region, center portions of the first and second light-receiving regions being wider than peripheral portions of the first and second light-receiving regions, and

wherein said control unit is arranged to detect a focus state of the image sensing lens by using the first and second light-receiving regions.

19 (CURRENTLY AMENDED): The apparatus according to claim 18, wherein said control unit controls photographing operation so as to photograph an object by using the first and second light-receiving region regions.

20 (CURRENTLY AMENDED): The apparatus according to claim 18, wherein said control unit determines, by using the first third light-receiving region, a time during which charges are accumulated in the first and second light-receiving region regions.

21 (CURRENTLY AMENDED): The apparatus according to claim 18, wherein said control unit controls a time during which charges are accumulated in the first and second light-receiving

~~region~~ regions, in accordance with an exposure amount of the ~~first~~ third light-receiving region in focus adjustment.

22 (CURRENTLY AMENDED): The apparatus according to claim 18, wherein said control unit individually reads out charges accumulated in the first, second and third light-receiving ~~region and charges accumulated in the second light-receiving region~~ regions in focus adjustment, and reads out a sum of charges accumulated in the first, second and third light-receiving ~~region~~ regions and charges accumulated in the two divided light-receiving regions in photography.

23 (CANCELLED):

24 (CURRENTLY AMENDED): The apparatus according to claim ~~23~~ 18, wherein the ~~two divided~~ first and second light-receiving regions receive beams from two predetermined regions on a pupil of the image sensing lens, the two predetermined regions being regions that sandwich an optical axis.

25 (CURRENTLY AMENDED): The apparatus according to claim ~~23~~ 18, wherein an interval between the ~~two-divided~~ first and second light-receiving regions is relatively narrow at a center of the ~~first~~ third light-receiving region and relatively wide at two ends of the ~~first~~ third light-receiving region.

26 (CURRENTLY AMENDED): The apparatus according to claim 23 18, wherein the ~~first~~ third light-receiving region is relatively narrow at a center and relatively wide at two ends.

27 (CURRENTLY AMENDED): The apparatus according to claim 23 18, wherein the ~~first~~ third light-receiving region is narrower than a width of each of the ~~two-divided~~ first and second light-receiving regions at a center, and wider than the width of each of the ~~two-divided~~ first and second light-receiving regions at two ends.

28 (CURRENTLY AMENDED): The apparatus according to claim 23, wherein a region formed from the first, ~~and second~~ and third light-receiving regions has a substantially regular polygonal shape.

29 (CURRENTLY AMENDED): The apparatus according to claim 23 18, wherein a region formed from the first, second and third light-receiving region has a shape substantially obtained by cutting off each corner of a square.

30 (ORIGINAL): An image processing apparatus comprising the image sensing apparatus defined in claim 18.

31-36 (CANCELLED):